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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,563	08/17/2001	Toshinori Tanaka	Q65757	4247

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SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER

MULLINS, BURTON S

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 04/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/931,563

Applicant(s)

TANAKA ET AL.

Examiner

Burton S. Mullins

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-6 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 24 February 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The corrected or substitute drawings were received on 24 February 2003. These drawings are accepted.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in view of Tanaka (US 6,043,581). Applicant's admitted prior art (specification pp.1-5, Figs.7-12) teaches a dynamo-electric machine comprising: a yoke 101 (Fig.7); magnetic poles 102 fixed in said yoke (Fig.7); a shaft 104 rotatable provided in said yoke (Fig.7); an armature 105 having a winding 111 consisting of a plurality of coil portions 114A and 114B each formed by lap-winding (p.1, third paragraph) a conductor 114 between a corresponding pair of slots 110 formed in an outer circumferential surface portion of a core 109 fixed to said shaft in such a way as to extend in an axial direction thereof (Fig.7); a commutator 106 fixed to an end portion of said shaft and having a plurality of segments 112 to which both end sections (leads 115; Figs.8-9) of said coil portions are electrically connected; brushes 108 made to respectively abut against the surfaces of said segments of said commutator (p.3, second full paragraph); wherein n of said coil portions 114A and 114B (n=88) are parallel-connected between said segments (p.3, fourth full paragraph) where n (n=88) is a common divisor of the number of the magnetic poles and the number of the slots and equal to

or more than 2 (prior art shows four-pole, lap wound motor with twenty-two slots); and wherein said coil portions 114A and 114B are disposed in magnetically symmetrical different slots (p.3, third and fourth full paragraphs, where 114A is 180 electrical degrees apart from 114B).

The prior art states that adjacent commutator segments 112 are at the same potential (p.3, third full paragraph) but does not teach “equalizers for connecting said segments, which are to be at equal electric potential, to each other.” In other words, when comparing prior art wiring diagram of Fig.9 with applicant’s invention Fig.3, there are no “equalizers” 200 connecting all the segments 112 to each other in the prior art, Fig.9.

Tanaka, meanwhile, teaches a motor (Figs.1&4) comprising: yoke (not shown; c.3, lines 7-10); magnetic poles fixed in the yoke; a commutator 7 fixed to an end portion of the shaft and having plural segments 8 to which both end sections of the coil portions 6 are electrically connected (by means of hooks 31a-41a); and further includes equalizers 9 connecting the segments 8 at the same potential (c.3, lines 25-27; Fig.1). The equalizers prevent occurrence of circulating currents, improves resistance to vibrations, and cancels induced voltages (c.6, lines 9-27).

It would have been obvious to one having ordinary skill at the time of the invention to modify the prior art armature and provide equalizers per Tanaka since this would have been desirable to prevent the occurrence of circulating currents, improve resistance to vibrations, and cancel induced voltages.

Regarding claim 3, see Tanaka, c.5, lines 25-32.

Regarding claim 4, see Tanaka, c.6, lines 42-47.

Regarding claim 5, in Tanaka the conductor (or wire) 5 is enamel-coated (c.3, lines 17-18).

Regarding claim 6, applicant's prior art teaches use of the machine for an electric power steering system (specification, p.1, second paragraph).

Allowable Subject Matter

4. Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Neither applicant's admitted prior art nor Tanaka, alone or in combination, teach that each parallel coil portion is further subdivided into a plurality of small coil portions parallel-connected to one another. In Tanaka, the "double-winding" configuration does not further specify smaller coils comprising each coil in each layer of the double winding.

Response to Arguments

5. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.


Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.


Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
April 22, 2003